

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Request for Examiner-Initialed PTO-1449 Form

Attached to the Office Action of February 2, 2009 is a copy of the PTO-1449 submitted with Applicants' IDS of March 29, 2005. Although the Examiner signed the bottom of the PTO-1449 Form, the Examiner did not initial references AL or AP.

In a telephone conversation with Applicants' representative on February 18, 2009, the Examiner indicated that reference AP was crossed through because the Examiner recited the reference on the PTO-892 Form attached to the Office Action. However, Applicants kindly note that the citation on the PTO-892 Form has an incorrect page number. Accordingly, Applicants enclose a PTO-1449 Form on which the reference is recited with the correct page number. Applicants respectfully request that the Examiner initial next to said reference, and forward a copy of the initialed form to Applicants with the next correspondence.

Additionally, during the same conversation, the Examiner indicated that she crossed through reference AL because a copy of the reference is not present in file. Applicants enclose herewith a copy of the reference (EP 063 389) for the Examiner's consideration. This reference is also cited on the attached PTO-1449 Form, so that the Examiner may initial next to the reference to indicate that it has been considered.

Claim Amendments

Claim 16 has been amended to incorporate the limitation of claim 31, as a result of which claim 31 has been cancelled, without prejudice or disclaimer.

Accordingly, no new matter has been added to the application by these amendments.

Patentability Arguments

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Rejection Under 35 U.S.C. § 103(a)

The rejection of claims 16, 17, 20 and 22-32 under 35 U.S.C. § 103(a) as being unpatentable over Deffense and Tirtiaux taken together is respectfully traversed.

The Position of the Examiner

The Examiner takes the position that Deffense discloses multiple fractionations of oils. The Examiner refers to Figure 1, stating that palm oil is fractionated into hard stearin and olein, then olein is fractionated into soft palm mid fraction and super olein in a second stage fractionation, then the palm oil is further fractionated into a third stage. The Examiner admits that the claims differ from the teachings of the Deffense reference in the recitation of how dry fractionation is performed.

The Examiner asserts that Tirtiaux specifically describes the fractionation process as “cooling melting fat” to create hard crystals for separation. The Examiner admits that the claims appear to differ from the cited references in the recitation of the heating step. The Examiner takes the position that although heating is not mentioned, one of ordinary skill in the art would understand that a melting fat must have undergone a heating step. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to heat the palm oil or palm fraction of the references to melt the oil fraction for crystallization.

Applicants' Arguments

Applicants respectfully traverse the Examiner's position for the following reasons.

The Deffense and Tirtiaux references relate to fractionation of unprocessed crude oil, such as palm oil, milk fat, tallow, poultry oil, etc. The objective of these references is to provide the simplest and cheapest fractional crystallization process, where such a process simply consists of a controlled

crystallization of the melted oil, conducted according to a specific cooling program. (Please see the paragraph starting from the top of the first column on page 33 of the Tirtiaux reference.) It has been considered heretofore in the prior art that the above objective can be satisfactorily achieved by simple cooling. In fact, no additional technique has been studied in the prior art, including references such as Deffense and Tirtiaux.

Page 34 of Deffense (Selectivity of dry fraction section, line 8), describes as follows:

“However, if the cooling is made gradually, with specific seeding conditions and under perfect control by computer, the different types of glycerides will crystallize selectively and successively according to their physical characteristics.”

Although this description teaches the importance of cooling, no heating step is suggested.

Further, the paragraph bridging the second column to the third column on page 33 of Tirtiaux, describes as follows:

“A rapid cooling rate, for example, will promote crystallization in the unstable polymorphic forms, with possible formation of crystalline clusters. This leads to important intersolubility and poor selectivity of the crystallization; the use of a membrane filter-press is in this case the most important aspect of the fractionation. However, a slower cooling rate will favor crystallization of the most stable polymorphic forms characterized by a lower intersolubility and a better selectivity of the crystallization; crystals of good quality will be easily filtered whatever the separation equipment.”

Thus, Tirtiaux discloses two cooling rates, one is a rapid cooling rate and the other is a slow cooling rate. In case of a rapid cooling rate, crystallization is promoted, while selectivity of the crystallization is poor. In contrast, in case of a slow cooling rate, crystallization is slow, while selectivity of the crystallization is good.

There is no further disclosure about temperature conditions in Tirtiaux.

On the other hand, an objective of the present invention is to provide a dry fractionation method having a high fractionation capability suitable for using in such a stage for obtaining hard butter that species have been increased. In order to make this clear, the raw material fat is defined by the above-discussed amendments, i.e., the raw material fat is a vegetable butter, an interesterified fat or a fractionated crystalline fraction thereof, or an isomerization hydrogenated fat.

As described on page 1, line 23 to page 2, line 4 of the specification, “dry fractionation has

been seldom used as a fractionation method in such a stage for obtaining a hard butter that molecular species have been increased after treatment in processing steps such as hydrogenation and interesterification, though a dry fractionation method may be employed in fractionation of crude fat.”

The conventional simple cooling disclosed in the prior art, such as Deffense and Tirtiaux, has both merits and demerits as mentioned with respect to the rapid cooling rate and the slow cooling rate. Then, in the present invention, an objective is achieved by combining cooling and partial melting with raising temperature. Cooling promotes crystallization, while partial melting with raising temperature improves selectivity of crystallization with minimizing intersolubility of crystals. As described in page 11, lines 8 to 17 of the specification, “in the method of the present invention, wherein the fat including the main component is crystallized and then partially melted by raising the temperature, glycerides other than the higher melting point glycerides are allowed to readily melt by taking advantage of a difference in solubility of the main component and the high-melting point glycerides in a liquid fraction, thereby enabling a small amount of the higher melting point glycerides to be separated from the main component.” Thus, the method of the present invention can be used in such a stage for obtaining hard butter that species have been increased.

Deffense and Tirtiaux, alone or in combination, fail to teach or suggest the combination of cooling and partial melting with raising temperature, as required by Applicants’ claims.

Accordingly, the subject matter of Applicants’ claims 16-17, 20, 22-30 and 32 is clearly patentable over the cited references. It is respectfully requested that the above-rejection be withdrawn.

Conclusion

Therefore, in view of the foregoing amendments and remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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